

Patent Claims

1. Computer tomograph system, comprising a rotating part (1) for accommodating at least one X-ray tube (4) and a detector arrangement (5), and also a stationary part (2) comprising:
- 5 - a bearing assembly (3) for rotatably supporting the rotating part (1); and
- at least one d.c.-a.c. converter (6) for generating an alternating current at a first frequency;
- characterized in that
- 10 the stationary part (2) comprises a conductor arrangement (7) supplied with alternating current from one or a plurality of d.c.-a.c. converters (6), and the rotating part (1) comprises at least one inductive coupler (8) for engaging, exclusively in dependence upon position, with a section of the entire length of the conductor arrangement (7), and for coupling electrical energy out of the conductor
- 15 arrangement.
2. Device according to the preamble of claim 1, characterized in that
- the rotating part (1) comprises a conductor arrangement (7) from which it couples out
- 20 electrical energy, and also the stationary part (2) comprises at least one inductive coupler (8) that is fed with the alternating current of one or a plurality of d.c.-a.c. converters (6), and is in engagement with a section of the entire length of the conductor arrangement (7) exclusively in dependence upon position.
- 25 3. Device according to claim 1 or 2, characterized in that
- the conductor arrangement (7) comprises 1, 2, or 3 parallel conductors (9a, 9b, 9c) through which currents flow so that the sum of the currents through all conductors is zero at every place of the conductor arrangement.

4. Device according to any one of the preceding claims,
characterized in that
the conductor arrangement (7) comprises a plurality of segments (10a, 10b, 10c) along
the circumferential direction.

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5. Device according to any one of the preceding claims,
characterized in that
a plurality of couplers (8a, 8, 8) are provided, at least one coupler being engaged with the
conductor arrangement (7) at any instant of time.

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6. Device according to any one of the preceding claims,
characterized in that
at least one coupler (8) comprises magnetically soft material for concentrating the
magnetic flux.

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7. Device according to any one of the preceding claims,
characterized in that
a plurality of d.c.-a.c.converters (6) are provided, each feeding one conductor and/or one
segment of the conductor arrangement (7).

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8. Device according to any one of the preceding claims,
characterized in that
at least one d.c.-a.c. converter (6) is adapted to feed one conductor and/or one segment of
the conductor arrangement (7) at or close to the respective resonance frequency.

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9. Device according to any one of the preceding claims,
characterized in that
optionally at least one series capacity is connected in series with the conductor
arrangement (7), or with the tap 8, and/or optionally at least one parallel capacity is
connected in parallel with the conductor arrangement 7, or with the tap 8.

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10. Device according to any one of the preceding claims,
characterized in that
at least one d.c.-a.c. converter (6) is adapted to detect a condition in which the conductor
arrangement (7), or a segment of the conductor arrangement (7), is not engaged with at
5 least one coupler (8); and to switch off the d.c.-ac. converter, or to control it to a no-load
frequency in case of non-engagement.

11. Device according to any one of the preceding claims,
characterized in that
10 at least one d.c.-a.c. converter (6) is adapted to issue an alternating current of at least one
second frequency to feed other consumers; and that at least one coupler (8), or the
circuitry of a coupler (8), is adapted to be frequency selective to select the second
frequency, and to pass mainly the tapped-off signal of the second frequency to at least
one other consumer.

12. Device according to any one of the preceding claims,
characterized in that
at least one d.c.-a.c. converter (6) is adapted to issue an alternating current at a variable
pulse-width repetition rate; and that furthermore a filter unit is provided on the rotating
20 side to select frequency components with whole-number multiples of the first frequency,
and to feed at least one other consumer with the selected frequency components.

13. Device according to any one of the preceding claims,
characterized in that
25 at least one d.c.-a.c. converter (6) is adapted to issue an alternating current with a
modulated output frequency, the frequency sweep being chosen to be so small that no
significant fluctuations of the amplitude of the output current occur, and that
simultaneously the modulation frequency is higher than, or equal to, 100 Hz.